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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,727	07/19/2002	Peter Knoll	10191/2289	4483

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EXAMINER

SEVER, ANDREW T

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,727

Applicant(s)

KNOLL ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claim 25, specifically projecting a first image on a first surface and second image on a second surface portion of the display surface must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because part 1,10 should be labeled in figures 4 and 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Figures 4 and 5 teach the internal structure of projector 1, 10 of figure 1 and figure 2 respectively and should be labeled accordingly.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 17-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant claims in claim 17 that the display surface is arranged on the vehicle "in addition to on a windshield, position of the display surface on the vehicle including adjacent to the windshield on an instrument panel of the vehicle."

This language is confusing and unclear. For example, is the display surface the windshield or is it a second surface that is adjacent to the windshield. The wording of the claim appears to apply it is both while at the same time implying that it cannot be the windshield. This claim is therefore indefinite. The office will assume for purposes of a prior art search that applicant is claiming that the display surface is disposed adjacent to the windshield on an instrument panel of the vehicle. Claims 18-30 are dependent on claim 17 and are therefore also rejected.

5. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 16-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Jost et al. (US 4,919,517)

a. With regards to applicant's claims 16-17 as nearly as can be understood (claim 17):

Jost teaches in figure 1 a display apparatus which projects an image from a projection unit (5) mounted on the roof of a vehicle. The image is projected onto a display surface (mirror 11), which is positioned adjacent to the windshield on an instrument panel of the vehicle as is believed to be claimed in applicant's claim 17.

b. With regards to applicant's claim 18-22:

The image is formed and then reflected off of the windshield (a reflective surface arranged adjacent to the display surface) towards the driver/viewer as is claimed in applicant's claims 19 and 20. Jost teaches in figure 3 that the display surface (The surface where the image is formed (real image) comprise of a structural pattern which is specified (in column 2 line 60 and claimed in claim 5) to be a Fresnel mirror, which those with ordinary skill in the art would recognize as a roughening of the display surface as is claimed in applicant's claim 18 and 21. Alternatively it can be constructed of a

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holographic optical element (as taught in column 3 lines 63-67 and claim 4) as is claimed in applicant's claim 22.

c. With regards to applicant's claims 23:

As shown in figure 3, the Fresnel mirror pattern is roughly a saw tooth structure in a 2 dimensional cut-out .the three dimensional Fresnel pattern comprises of concentric rings forming a semi-spherical configuration as is claimed in applicant's claim 24.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jost et al. as applied to claims 16-23 above.

As described in more detail above, Jost teaches a display apparatus in a vehicle comprising of a projection unit arrange on a vehicle roof for projecting an image on a display surface position adjacent to the windshield, which then reflects the image off the windshield and towards the direction of a viewer. Jost further teaches that the surface of the display apparatus has a structural pattern, which comprises of a Fresnel structure.

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Jost however does not necessarily teach that the display surface is of a semi-spherical configuration as is claimed in applicant's claim 24 and Jost does not teach that two images can be projected onto the display surface by the projector as is claimed in applicant's claim 25.

With regards to applicant's claim 24, inherently the three-dimensional Fresnel pattern comprises of concentric rings forming a semi-spherical configuration as is claimed in applicant's claim 24. Further it is well known in the projection arts to use a convex mirror in reflective projection systems to allow the image to be seen over a wide spatial angle. (For example see US patent 6409351 to Ligon and US 6,513,935 to Ogawa.) Since using a convex mirror to allow the image to be seen over a wide spatial angle is well known and since it allows for viewers besides the driver to see the projected image, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a semi-spherical configuration in the design of the display surface taught by Jost et al.

With regards to applicant's claims 25 and 26, it is well known in the video arts to use one image source to display/project two images; specifically the video processing hardware takes two images and displays the first image in one portion of the display surface and a second image in a second surface portion of the display surface is done with picture in picture. (See for example US patent 5,280,540 to Addeo et al. and US 5,309,238 to Bae.) Since LCD projectors (which Jost et al. teaches it can be in column 2 line 6), which are a type of video projector as is claimed by applicant's claim 26, commonly are used to project TV type images and are well known to include video

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processing processors that have the capabilities of TV's, it would be obvious for one of ordinary skill in the art to have designed Jost's projector to have picture in picture capability as well, so that the driver can watch his speed while reading a map for example.

10. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jost et al. as applied to claims 24-26 above and further in view of Hwang et al. (US 6,317,170.)

As described in more detail above, Jost teaches a display apparatus in a vehicle comprising of a projection unit arranged on a vehicle roof for projecting an image on a display surface positioned adjacent to the windshield, which then reflects the image off the windshield and towards the direction of a viewer. Jost further teaches that the surface of the display apparatus has a structural pattern, which comprises of a Fresnel structure. Jost in view of well known projection and video knowledge further teaches splitting the image into two images and dividing the display surface into two areas and projecting two separate images in those areas. Jost teaches that the projector can be an LCD projector; Jost does not teach that the projector is a laser type projector.

Hwang et al. teaches in figure 3 a laser projector, which comprises 3 light sources (150) of different colors (red, green, and blue) as is claimed in applicant's claim 29, which are combined and scanned by a means for scanning (900) and projected on a display surface (1000.) The light sources (150) comprise of laser diodes (see column 5 line 67), which is a laser beam generation unit as is claimed by applicant's claim 27 As

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shown in figure 1 and as is well known in the art, scanning means comprises of moving mirrors (80 and 70) as is claimed by applicant's claim 28.

Hwang teaches in column 1 lines 19-35 that the LCD type projector taught by Jost has the limitation of requiring large amounts of power to generate a significantly bright image, Hwang further teaches that laser projectors overcome this in lines 36-48. Since presumably the projector of Jost is to be operated in both nighttime and daytime conditions, the projector needs to be significantly bright for daytime operation. Since it is desirable to use as little power as possible in a vehicle (as this decreases fuel efficiency and automotive electrical systems have limited capacity as compared to a home or theater), it would be obvious to one of ordinary skill in the art at the time the invention was made to use a laser projector as taught by Hwang for the LCD type projector taught by Jost in Jost's display apparatus in a vehicle.

With regards to applicant's claim 30. Jost in figure 1 shows that the display surface is approximately parallel to a windshield of the vehicle.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 4,908,611 to Iino: Applicant is directed towards figures 1A and 3. Iino could be also used in a 35 USC 102b type rejection of applicant's claims 16 and 17 (as nearly as can be understood) as well as in 35 USC 103 type rejections of other claims.

US 5,400,045 to Aoki: Applicant is directed towards figure 1 which could be used in a 35 USC 102b type rejection of applicant's claim 16 and 17 (as nearly as can be understood). Applicant is also directed towards figure 7 which shows the projector projecting two images on two parts of the display surface as is claimed by applicant's claim 25.

US 5,034,732 to Iino: Applicant is directed towards figure 1 and 3 which could be used in a 35 USC 102b type rejection of applicant's claims 16 and 17 (as nearly as can be understood). Applicant should note that projector 7 is disposed at the position where a rear view mirror is generally disposed in a vehicle.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 703-305-4036. The examiner can normally be reached on 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on 703-308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AS


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